ASSIGNMENT 11

Textbook Assignment: "Rotary-Wing Flight Control Systems," chapter 10, pages 10-1 through 10-20, and "Aircraft Wheels, Tires, and Tubes," chapter 11, pages 11-1 through 11-28.

11-1. The word "helicopter" means helical wing, which comes from what language?

1. Greek
2. French
3. Hebrew
4. Italian

11-2. Helicopter lift is provided by what means?

1. The engines
2. The fixed wings
3. The rotor blades
4. The fuselage design

11-3. Rotor blades that are highly polished will reduce which of the following forces?

1. Lift
2. Drag
3. Speed
4. Velocity

11-4. Rotor blade dissymmetry is created by what means?

1. By horizontal flight only
2. By hovering in a wind condition only
3. By horizontal flight or hovering in a wind condition
4. By hovering in a no-wind condition

11-5. What method corrects dissymmetry by equalizing lift?

1. Coning
2. Fluttering
3. Autorotating
4. Blade flapping

11-6. What type of main rotor allows each of its blades to move vertically and horizontally?

1. A hinged rotor
2. A horizontal rotor
3. An adjustable rotor
4. An articulated rotor

11-7. The maximum ground cushion effect is achieved during what condition?

1. 0 knots
2. 7 knots
3. 12 knots
4. 15 knots

11-8. What is the most common type of helicopter?

1. Dual main rotor
2. Single main rotor
3. Tandem main rotor
4. Coaxial main rotor

11-9. The lateral movement of a helicopter is controlled by which of the following systems?

1. Cyclic only
2. Collective only
3. Cyclic and collective only
4. Cyclic, collective, and rotary rudder

11-10. The friction lock on a helicopter's collective stick is used for which of the following purposes?

1. To provide feel when operating the controls only
2. To prevent the stick from creeping during flight only
3. To provide feel when operating the controls and to prevent the stick from creeping during flight
4. To provide a means of locking the main rotor assembly when parking the helicopter in high winds

11-11. The negative force gradient spring on a rotary rudder control system is preloaded to what maximum amount of force?

1. 500 lb
2. 600 lb
3. 700 lb
4. 800 lb

11-12. What component integrates collective pitch control movements with fore and aft, lateral, and directional movements?

1. The auxiliary servo cylinder
2. The primary servo cylinder
3. The rotor servo
4. The mixing unit

11-13. During a power failure, what, if anything, happens to the primary servo cylinders?

1. They are bypassed
2. They function as control rods only
3. They operate at a reduced rate of speed
4. Nothing

11-14. What component(s) allow(s) the swashplate to tilt off of its horizontal plane and move on its vertical axis?

1. The nutating plate
2. The universal joint
3. The ball ring and socket
4. The constant velocity joint

11-15. Which, if any, of the following solvents is authorized for cleaning rotary-wing and rudder blades?

1. Naphtha
2. Lacquer thinner
3. Carbon tetrachloride
4. None of the above

11-16. Proper blade tracking prevents which of the following problems?

1. Flexing
2. Vibration
3. Overlapping
4. Dissymmetry of lift

11-17. Which of the following types of blade tracking devices can be used in flight or on the ground?

1. Static
2. Dynamic
3. Strobex
4. Hydrostatic

11-18. A rotor brake assembly is comparable to which of the following wheel brake assemblies?

1. Single disc
2. Multiple disc
3. Segmented rotor
4. Expandable tube

11-19. What is the minimum pressure required to effectively operate the rotor brake?

1. 320 psi
2. 370 psi
3. 410 psi
4. 450 psi

11-20. When blade folding is performed, what is the condition of (a) the engine and (b) the rotary-wing head?

1. (a) Stopped
   (b) stopped
2. (a) Stopped
   (b) operating
3. (a) Operating
   (b) stopped
4. (a) Operating
   (b) operating

11-21. What flight control device(s) may have to be moved around the neutral position to engage the control lockpin?

1. The pilot's foot pedals
2. The cyclic control stick
3. The copilot's foot pedals
4. The collective control stick

IN ANSWERING QUESTIONS 11-22 THROUGH 11-25, SELECT FROM COLUMN B THE BLADE FOLDING SYSTEM COMPONENT THAT MATCHES THE FUNCTION LISTED IN COLUMN A.

	A. FUNCTION	B. COMPONENT
11-22.	Prevents pressure from entering the blade fold system during flight	1. Blade fold accumulator
11-23.	Transfers fluid to the rotary-wing head for folding	2. Control lock cylinder
11-24.	Dampens out pressure surges during the fold and spread cycles	3. Rotor coupling
11-25.	Locks the flight controls during the fold cycle	4. Safety valve

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11-26. What is the normal time for blade folding?

1. 12 to 15 sec
2. 15 to 21 sec
3. 22 to 37 sec
4. 27 to 41 sec

11-27. Aircraft wheels are made from which of the following types of metal?

1. Steel
2. Aluminum alloy only
3. Magnesium alloy only
4. Aluminum or magnesium alloys

11-28. The flange of a remountable flange wheel is held in place by what component?

1. A locknut
2. A lockring
3. A locking pin
4. A locking key

IN ANSWERING QUESTION 11-29, REFER TO FIGURE 11-3 IN THE TEXTBOOK.

11-29. Which of the following components have been installed on the aircraft wheels to allow the attachment of braking components?

1. The drive keys
2. The bearing cups
3. The fusible plug
4. The remountable flange lock

11-30. Which of the following conditions is a major cause of rejection or failure of aircraft wheels?

1. Crashes
2. Blowouts
3. Normal wear
4. Loss of lubrication

11-31. Aircraft bearings should be cleaned in what type of solvent?

1. Fuel
2. Freon
3. P-D-680
4. Naphtha

11-32. You should presoak felt qrease retainers in which of the following substances?

1. VV-L-800
2. Engine oil
3. MIL-G-81322
4. Hydraulic fluid

IN ANSWERING QUESTION 11-33, REFER TO FIGURE 11-6 IN THE TEXTBOOK.

11-33. During tire inflation, the setting on the pressure regulator should NEVER exceed what pressure?

1. 800 psi
2. 700 psi
3. 600 psi
4. 500 psi

11-34. Information on cleaning aircraft wheels can be found in which of the following publications?

1. NAVAIR 01-1A-1
2. NAVAIR 04-10-1
3. NAVAIR 04-10-506
4. NAVAIR 04-10-508

11-35. An aircraft wheel assembly with a partially melted fuse plug is NOT a reason for rejection.

1. True
2. False

11-36. A defect in a wheel rim is NOT considered significant unless it is deeper than what prescribed depth?

1. 0.010 in.
2. 0.015 in.
3. 0.017 in.
4. 0.020 in.

IN ANSWERING QUESTIONS 11-37 THROUGH 11-40, SELECT FROM COLUMN B THE AIRCRAFT TIRE SECTION DESCRIBED IN COLUMN A.

	A. DESCRIPTION	B. TIRE SECTION
11-37.	Multiple layers of nylon with individual cords arranged parallel to each other	1. Chafing strips
11-38.	Surface that contacts the ground	2. Cord Body
11-39.	Outer layer of rubber adjoining the tread and extending to the beads	3. Tread
11-40.	Provide additional rigidity to the bead	4. Sidewall

11-41. Which of the following tread patterns or designs is NOT used on naval aircraft?

1. Plain
2. Ribbed
3. Twisted
4. Nonskid

11-42. Each rebuilt aircraft tire receives a final nondestructive inspection by the use of what method?

1. Visual
2. Electromagnetic
3. Penetrating radiation
4. Laser beam optical holographic

IN ANSWERING QUESTION 11-43, REFER TO FIGURE 11-14 IN THE TEXTBOOK.

11-43. What total number of times has this tire been rebuilt?

1. One
2. Two
3. Five
4. Four

11-44. The vent holes in tubeless tires are marked with what color dots?

1. Red
2. Green
3. White
4. Aluminum

11-45. A tire and wheel assembly should be removed from an aircraft and sent to AIMD if it shows a repeated pressure loss exceeding what prescribed percent of the correct operating inflation pressure?

1. 5%
2. 10%
3. 12%
4. 15%

11-46. The slippage mark on an aircraft tire should be inspected for slippage on the rim at what maximum interval?

1. Once a week
2. Once a month
3. After 10 flights
4. After each flight

11-47. Because of long intervals between tire changes, extra care is required when you are inspecting mounted tires on fixed-wing carrier-based aircraft.

1. True
2. False

11-48. Before disassembling a wheel assembly, what is the first thing you should do?

1. Break the tire bead
2. Remove the wheel flange
3. Check the tire for cuts
4. Ensure the tire is completely deflated

11-49. Which of the following tire bead-breaking machines is intended for shipboard use?

1. Lee-I
2. Lee-II
3. Lee-IX
4. Lee-XX

11-50. The inner tube of a tube-type aircraft tire may be reused if it is in good condition and less than what total number of years old?

1. 5 yr
2. 6 yr
3. 7 yr
4. 8 yr

11-51. Before inserting an inner tube into a tire, you should sprinkle it which of the following substances?

1. Flour
2. Water
3. Cornstarch
4. Talcum powder

11-52. What procedure should you use to identify a tubeless tire?

1. Check the inside of the tire for an orange stripe
2. Check to make sure the word “tubeless” is stamped on the sidewall
3. Check to make sure the manufacturer’s mold number is preceeded with the letter X
4. Check the tire’s serial number with the list of tubeless tire serial numbers

11-53. The remote tire inflator assembly should be calibrated upon initial receipt, before being placed into service, and at what other maximum interval?

1. Every month
2. Every 2 months
3. Every 3 months
4. Every 6 months

11-54. You have inflated a tube-type tire to its maximum operating pressure. The tire must remain at this pressure for what minimum length of time before you check it for a pressure loss?

1. 10 min
2. 7 min
3. 5 min
4. 4 min

11-55. What code is used to condemn a nonretreadable tire?

1. C
2. H
3. N
4. R

11-56. What solution should you use to clean oil or grease from a tire?

1. P-D-680
2. Jet fuel
3. Kerosene
4. Soap and water

IN ANSWERING QUESTIONS 11-57 THROUGH 11-59, SELECT FROM COLUMN B THE MOST PROBABLE CAUSE FOR THE AIRCRAFT TIRE/WHEEL DEFECT LISTED IN COLUMN A. NOT ALL ITEMS IN COLUMN B WILL BE USED.

	A. DEFECT	B. CAUSE
11-57.	Rapid and uneven wear at the outer edges	1. Over-inflated
11-58.	Thumping during takeoff	2. Under-inflated
11-59.	Excessive wear at one spot	3. Nylon flat spot
		4. Wheel out of balance

11-60. Which of the following types of inner tubes has radial vent ridges molded on the surface?

1. Type I
2. Type II
3. Type III
4. Type IV